UNITED STATES PATENT AND TRADEMARK OFFICE

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EXAMINER
PARKER, BRANDI P

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

PTOL-90A (Rev. 04/07)

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on *26 January 2004*.
2a) ☐ This action is **FINAL**.   2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) *1-24* is/are pending in the application.
   4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) *1-24* is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.
10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
   Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
   Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
   a) ☐ All   b) ☐ Some * c) ☐ None of:
     1. ☐ Certified copies of the priority documents have been received.
     2. ☐ Certified copies of the priority documents have been received in Application No. _____.
     3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
   * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
   Paper No(s)/Mail Date *1/26/2004*.

4) ☐ Interview Summary (PTO-413)
     Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____ .

DETAILED ACTION

Acknowledgements

1.   Claims 1-24 are pending in this Office Action.

Claim Rejections - 35 USC § 101

2.   35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

3.   Claims 1-23 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

4.   Claims 1 and 23 are directed to identifying an optimum set of product configurations. Therefore, as the claims are not sufficiently tied to an apparatus, such as a computer, and/or do not transform the underlying subject matter (from your claim) to a different state the claimed method is non-statutory and therefore rejected under 35 U.S.C. 101. *Diamond v. Diehr*, 450 U.S. 175, 184 (1981); *Parker v. Flook*, 437 U.S. 584, 588 n.9 (1978); *Gottschalk v. Benson*, 409 U.S. 63, 70 (1972).

5.   Claims 2-22 are also rejected for failing to be sufficiently tied to an apparatus and

for being dependent upon rejected claims 1 and 23.

Claim Rejections - 35 USC § 102

6.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

7.   Claims 1-3, 6, 7, 9-14 and 20-23 are rejected under 35 U.S.C. 102(e) as being

anticipated by Kapadia et al (US 7039602).

8.   With respect to claim 1, 21 and 23, Kapadia teaches a method of identifying an

optimum set of product configurations from a plurality of possible product configurations,

each product configuration having a plurality of selectable features, each selectable

feature having a plurality of options, comprising the steps of:

        a.   representing each of the plurality of possible product configurations as

        an ordered set of dimensions, each selectable feature being represented by one

        respective dimension of the ordered set (column/line 6/11-23);

b.   identifying a plurality of valid product configurations as a subset of the possible product configurations (column/line 5/2-7);

c.   defining configuration neighborhoods that identify at least one valid product configuration captured by another valid product configuration (column/line 6/19-23);

d.   defining an optimization model to identify the optimum set of valid product configurations based on a desired objective (column/line 6/56-7/2, 7/13-30);

e.   solving the optimization model (column/line 6/56-7/2, 7/13-30); and

f.   presenting the optimum set of valid product configurations that satisfy the desired objective (column/line 6/56-7/2, 7/13-30).

9.   As to claim 2, Kapadia teaches the method of claim 1 further comprising the step of associating a cost and a revenue to each valid product configuration (column/line 8/27-29).

10.   Regarding claim 3, Kapadia teaches the method of claim 2 wherein the cost associated with each valid product configuration is comprised of a plurality of per option costs (column/line 8-45-57).

11.   Regarding claim 6, Kapadia teaches the method of claim 1 wherein the desired objective is to maximize the profit of a manufacturer or retailer of the products (column/line 7/38-44).

12.   With respect to claim 7, Kapadia teaches the method of claim 1 wherein the desired objective is to minimize the costs of a manufacturer of the products (column/line 6/56-7/2, 7/13-30)

13.   Regarding claims 9 and 10, Kapadia teaches the method of claim 1 wherein the optimization model is defined based on any desired objective of the user, which can include when the optimum set of product configurations is fixed or variable. (column/line 6/56-7/2, 7/13-30)

14.   As to claim 11, Kapadia teaches the method of claim 1 wherein the dimensions of the ordered set represent the features in a fixed and non-modifiable order (column/line 5/8-18, regarding default configurations).

15.　　Regarding claim 12, Kapadia teaches the method of claim 1 wherein the step of identifying the valid product configurations comprises the steps of applying mix-and-match rules to identify invalid or impermissible product configurations (column/line 6/11-23).

16.　　With respect to claim 13, Kapadia teaches the method of claim 12.　Examiner notes that it is old and well known in the art to us fast enumeration algorithms to iterate though the contents of all possible configurations and and list the partial configurations separately.

17.　　As to claim 14, Kapadia teaches the method of claim 1 wherein the step of defining configuration neighborhoods comprises the step of defining a relation structure (column/line 8/30-38).

18.　　As to claim 20, Kapadia teaches the method of claim 14 wherein the relation structure identifies at least one valid product configuration that captures another valid product configuration through an upgrade, conversion, or acceptance of at least one option (column/line 8/22-29).

19.　　With respect to claim 22, whether or not the product is a manufactured good or service does not affect the structure of the method to limit the scope of the claim.

Therefore, claim 22 consist of non functional descriptive material and is anticipated by

Kapadia.

Claim Rejections - 35 USC § 103

20.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

>   (a) A patent may not be obtained though the invention is not identically disclosed or described as set
>   forth in section 102 of this title, if the differences between the subject matter sought to be patented and
>   the prior art are such that the subject matter as a whole would have been obvious at the time the
>   invention was made to a person having ordinary skill in the art to which said subject matter pertains.
>   Patentability shall not be negatived by the manner in which the invention was made.

21.   Claims 4, 5 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable

over Kapadia et al (US 7039602) in view of Schierholt (US 2005/0149377).

22.   With respect to claim 4, Kapadia teaches the method of claim 1. Kapadia does

not explicitly teach associating a demand to valid product configurations. However,

Schierholt teaches associating a demand to each valid product configuration (paragraph

0008). It would have been obvious to one with ordinary skill in the art to combine the

method disclosed in Kapadia with the methods in Schierholt by including demand in the

analysis to improve the optimization process to increase profit.

23.   As to claim 5, Kapadia does not explicitly teach associating demand with valid product configurations. However, Schierholt teaches wherein the demand associated with each valid product configuration is based on the demand of each respective option of the valid product configuration (paragraph 0010). It would have been obvious to one with ordinary skill in the art to combine the method disclosed in Kapadia with the methods in Schierholt by including demand in the analysis to improve the optimization process to increase profit.

24.   As to claim 8, Kapadia does not explicitly teach having an objective to maximize coverage of customer demand. However, Schierholt teaches wherein the desired objective is to maximize coverage of customer demand (paragraph 0013). It would have been obvious to one with ordinary skill in the art to combine the method disclosed in Kapadia with the methods in Schierholt by including demand in the analysis to improve the optimization process to increase profit.

25.   Claims 15 and 16 rejected under 35 U.S.C. 103(a) as being unpatentable over Kapadia et al (US 7039602) in view of Balasinski (US 7231374).

26.   Regarding to claim 15, Kapadia teaches the method of claim 14. Kapadia does not explicitly teach having options that are upgradeable. However, Balasinski teaches an upgrade relation that identifies at least one feature having an option that is upgradeable (column/line 6/23-29). Having the upgrade being at no additional cost to a customer consist of non functional descriptive material that does not limit the scope of the claim. It would have been obvious to one with ordinary skill in the art to combine Kapadia with Balasinski to increase a manufacturer's product exposure by offering available products that are compatible with the product that the customer wishes to purchase.

27.   With respect to claim 16, Kapadia does not explicitly teach features having options that are convertible at a conversion cost. However, Balasinski teaches the method of claim 14 wherein the relation structure is a convert relation that identifies at least one feature having an option that is convertible to another option at a respective conversion cost (Figure 2, column/line 2/2-28, 44-61, 7/61-67). It would have been obvious to one with ordinary skill in the art to combine Kapadia with Balasinski to increase a manufacturer's product exposure by offering available products that are compatible with the product that the customer wishes to purchase.

28.   Claims 17, 18 and 19, are rejected under 35 U.S.C. 103(a) as being unpatentable over Kapadia et al (US 7039602) in view of Walker et al (US 7347364).

29.   As to claim 17 and 19, Kapadia teaches the method of claim 14 having a relation

structure. Kapadia does not explicitly teach having an option at an acceptance value or

probability customer will accept the option.   However, Walker teaches identifying at

least one feature having an option that is acceptable to a consumer desiring a different

option at a respective acceptance value (column/line 4/46-67, regarding "expected

value" of alternative option).   It would have been obvious to one having ordinary skill in

the art to combine to Kapadia with Walker to select the best options to present to the

customer to improve the changes that the customer will select the option.

30.   Regarding claim 18, Kapadia does not explicitly teach having an acceptance

value that is a probability that the customer will accept the option. However, Walker

teaches wherein the acceptance value is a probability that the customer will accept the

acceptance option instead of the different option (column/line 4/46-67). It would have

been obvious to one having ordinary skill in the art to combine to Kapadia with Walker

to select the best options to present to the customer to improve the changes that the

customer will select the option.

31.   Claim 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kapadia

et al (US 7039602) in view of Schierholt (US 2005/0149377)

32.   Regarding to claim 24, Kapadia teaches A computerized system for identifying

an optimum set of product configurations comprising:

g.   a configuration generator for receiving product configuration data, the

product configuration data representative of all possible product

configurations, each product configuration defined by a plurality of features,

each feature having a plurality of options, the configuration generator applying

mix-and-match rule to identify a subset of valid product configurations, the

configuration generator further representing each of the valid product

configurations as an ordered array (column/line 6/11-23;);

h.   a cost calculator for calculating and associating a cost of manufacture for

each of the valid product configurations (column/line 6/56-7/2, 7/13-30)

i.   a revenue calculator for calculating and associating a revenue potential for

each of the valid product configurations (column/line 7/38-44);

j.   an objective-based modeler for defining an optimization model and for receiving product configuration information from the configuration generator, the demand simulator, the cost calculator, and the revenue calculator (column/line 6/56-7/2, 7/13-30); and

k.   an optimization engine for solving the optimization model and presenting the optimal set of product configurations and for presenting costs, revenue, and parts needed for the optimal set of product configurations (column/line 6/56-7/2, 7/13-30).

Kapadia does not explicitly teach incorporating demand for the valid product configurations. However, Schierholt teaches:

l.   a demand simulator for calculating relative demand for each of the valid product configurations (paragraph 0008, 0010, 0013);

It would have been obvious to one with ordinary skill in the art to combine the method disclosed in Kapadia with the methods in Schierholt to improve the optimization process to increase profit.

Conclusion

33.   The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Eisenbeis, C; Temam, O; Wijshoff, H, Fast Enumeration of Solutions for Data Dependence Analysis and Data Locality Optimization, August 1993, Volume 3, pages 299-306, and Dietrich et al (US 5630070, optimization of manufacturing resource planning for product configurations).

34.   Any inquiry concerning this communication or earlier communications from the examiner should be directed to BRANDI P. PARKER whose telephone number is (571) 272-9796. The examiner can normally be reached on Mon-Thurs. 8-5pm.

35.   If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Beth Van Doren can be reached on (571) 272-6737. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

36.   Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a

USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/BRANDI P PARKER/
Examiner, Art Unit 3623

/Andre Boyce/
Primary Examiner, Art Unit 3623